

Borough of



Chelmsford.

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# ANNUAL REPORT

OF THE

## Medical Officer of Health

(H. W. NEWTON, M.R.C.S., L.R.C.P., D.P.H.)


FOR

# 1907.

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CHELMSFORD

PRINTED BY THE "ESSEX WEEKLY NEWS" SERIES, LTD.



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Fairfield,

Chelmsford,

*Feb. 1st, 1908.*

TO THE CHAIRMAN AND OTHER MEMBERS OF  
THE TOWN COUNCIL OF THE BOROUGH OF  
CHELMSFORD.

GENTLEMEN,

I have the honor herewith to submit to you my Annual Report as Medical Officer of Health, concerning the vital statistics and general sanitary condition of the Borough. In my Annual Report for 1906 reference was made to the then proposed extension of the Borough. This has become an accomplished fact. Portions of the Parishes of Springfield and Writtle are now included in the Borough, but for general convenience and for the purposes of statistics Dr. Thresh, as Medical Officer of Health of Chelmsford Rural District, will for this year report as heretofore on these districts. He will deal with the Births and Deaths and also the Infectious Diseases up to the end of 1907.

In dealing with this Report from a medical and sanitary point of view, I can congratulate the Committee upon a considerable improvement this year over last year in the vital statistics. The Birth-rate in the Borough has improved considerably. This, I hope, may continue, for there is still considerable room for improvement. The Death-rate is so abnormally low that I call especial attention to it. It is certainly the lowest Death-rate by far that I have any record of. The Infantile Death-rate also is exceedingly low—also the lowest I can find recorded. The Zymotic Death-rate is equally remarkable.

During the year 1907 there has been no severe or well-defined outbreak of Infectious Disease. The number of cases notified are less than last year, Scarlet Fever, as usual, contributing more than half the number. Cases both of Scarlet Fever and Diphtheria have been notified with some regularity almost week by week. It might almost with truth be said that it is epidemic in character. Only one outbreak of any interest—and that was purely local in character—occurred at the Chelmsford Infirmary, when in a short time ten cases of Typhoid Fever were notified.

I regret I can record the completion of no work of sanitary importance, beyond the extension of the Borough Boundary, to include Springfield and the Waterhouse Estate.

## Population and Area.

The census population was in 1901 13,581. The estimated population in June, 1907, was 13,750. This gives an estimated increase of 169 for the past year. I am afraid that this estimated population would be found actually to be excessive, for owing to trade depression in the large industries in the Borough many families have gone away to seek for work elsewhere.

The natural increase for the year—i.e., the increase of Births over Deaths—is 170. Last year it was 77, and in 1905 it was 92.

In 1901 the number of inhabited houses in the Borough was 2,755, and in that year and up to November, 1907, the Borough area was 2,033 acres. From the commencement of this year—or, to be correct, from 9th November last—the added

parts of Springfield and Writtle have become part of the Borough. From Dr. Thresh I have received the following particulars:—

Population of Springfield, 1901 census, 3,274; inhabited houses, 674.

Estimated population of Springfield taken in by the Borough, to June, 1907, 3,160.

Estimated population of Waterhouse Estate taken in by the Borough, to June, 1907, 290.

Area of Springfield taken, 658 acres; inhabited houses, 638.

Area of Writtle taken, 163 acres; inhabited houses, 58.

The Birth and Death-rate of these added portions Dr. Thresh is unable to furnish me with at present.

Therefore, for the immediate future the area of the Borough of Chelmsford, exclusive of water, will be 2,854 acres.

The population of the extended Borough, estimated to the middle of 1907, will be 17,200; but for reasons I have given above I think the actual population of the Borough is slightly lower than this.

The Borough Surveyor tells me he estimates the number of inhabited houses in the extended Borough to be 3,512. I myself think this to be short of the actual number, which I should estimate to be 3,700.



## Births.

The total number of Births registered in the Borough during the year was 300. Of these, 154 were males and 146 were females. This gives a Birth-rate of 21.81 per 1,000, as against 19.7 per 1,000 for 1906. I am pleased indeed to be able to record a definite improvement in the Birth-rate. The increase of 2 per 1,000 is, I know, not very much, yet it is definite. This Birth-rate is, however, still very low, and is still considerably below the average. It is to be hoped that this increase may be a permanent one until the Birth-rate reaches the average figure of a young and healthy community.

## Deaths.

There have been 192 deaths registered as having taken place during the year in the Borough. Of this number 62 were deaths of non-residents or aliens, which occurred in the Public Institutions (Union House and Infirmary) in the Borough.

The gross Death-rate, therefore, for the year is 13.96 per 1,000, and the *corrected*, or nett, Death-rate for the year is 9.4 per 1,000. I have much pleasure in calling very careful attention to this very remarkable return. It is by far the lowest death return that I can find recorded in the Borough. The average Death-rate for the past ten years has been over 13 per 1,000. This even is a low return compared with the average returns for the rest of England, which is usually between 15 and 16 per 1,000 per year. This very low Death-rate—i.e., 9.4 per 1,000—combined with the low Infantile Death-rate, the low Zymotic Death-rate, and the distinct increase in the Birth-rate, makes, from my point of view, this Report for the year 1907 a remarkable one.

The ages at death of those resident in the Borough (excluding aliens) were as follows:—

18 or 14.6	per cent.	were under 1 year of age.
2 or 1.5	„	were over 1 year and under 5 years of age
7 or 5.3	„	„ 5 years „ 15 „
6 or 4.6	„	„ 15 „ „ 25 „
41 or 31.5	„	„ 25 „ „ 65 „
56 or 43.0	„	were over 65 years of age.

In regard to Table IV. (Causes of Death):—

3 or 2.3 per cent. of Deaths were due to Zymotic Diseases.

16 or 12.3 per cent. of Deaths were due to Tubercular Diseases of all forms.

10 or 7.69 per cent. of Deaths were due to Cancer and all other forms of Malignant Disease.

18 or 13.8 per cent. of Deaths were due to Bronchitis and Pneumonia.

14 or 10.7 per cent. of Deaths were due to Diseases of the Heart.

54 or 41.6 per cent. of Deaths were due to all other causes of death (not classified).

In every aspect therefore the death returns this year shew marked improvement as against those of last year. I hope most sincerely this improvement may be maintained, but these returns are so exceptionally good I suppose this can hardly be expected. I would here point out how remarkable it is that during the whole year not one death is recorded that has been caused by Influenza alone. Influenza, I am well

aware, alters apparently each year in character, as it does in virulence. This year, however, the cases have been obviously fewer in number as they have been equally lighter in character. Another very important, and perhaps more pleasing, fact I have to report, and that is the complete absence in the death returns of Infantile Diarrhoea. I think this is the first year in which this disease has been absent in the returns.

I have been asked by the Sanitary Committee to report more fully upon the deaths due to Cancer and other forms of Malignant Disease, in view, I believe, to ascertain if locality could possibly throw any light upon the cause of this form of disease.

I give here in full the deaths, etc., caused by this disease :

Date.	Sex.	Age.	Locality.	Variety.	Remarks.
23/1/07	M.	53	Infirmery	Carcinoma of color obstruction	Operation (alien)
29/1/07	F.	70	Duke Street	Malignant disease of liver	
30/1/07	M.	60	Workhouse	Malignant disease of liver and bowel	(alien)
2/2/07	F.	76	do.	Cancer of stomach	
4/2/07	M.	87	do.	Cancer of stomach and liver	(alien)
20/2/07	F.	81	Maltese Road	Carcinoma of rectum 3 years, bronchitis 2 days, colotomy 2 years	
18/4/07	M.	56	King Ed. Avenue	Sarcoma of pelvic glands, secondary to sarcoma of thigh (operation)	Exhaustion
3/5/07	M.	64	Workhouse	Epithelomia of leg	(alien)
19/5/07	F.	73	do.	Cancer of uterus	
1/6/07	F.	63	St. John's Road	Cancer of stomach	Exhaustion
17/8/07	M.	67	Roman Road	Carcinoma of rectum	
28/9/07	M.	69	Workhouse	Cancer of stomach	(alien)
11/10/07	F.	38	Duke Street	Epithelomia of vagina, malignant disease of uterus, rectum, and bladder	Exhaustion
19/10/07	F.	72	Railway Square	Carcinoma of bladder 9 months	Exhaustion
30/11/07	M.	64	Workhouse	Cancer of cesophagus	



I have given as fully as possible in this list the copy of the certificate of death. It will be seen, therefore, that 15 deaths from Cancer have been registered during the year. Of these, five were aliens; eight were males and 7 females. The average age at death was 66.5 years. Seven deaths were registered in the Union House and one in the Infirmary. Of the remaining deaths, five occurred in the North Ward and two in the South Ward.

It will be seen that Cancer of the Stomach and Bowels caused 7 deaths; Malignant Disease of the Liver, 2 deaths; Malignant Disease affecting the Generative Organs, 2 deaths; Disease of the Bladder, 1 death; Cancer of the Œsophagus, 1 death; Epithelomia, 1 death; Sarcoma, 1 death. Operation, it appears, was only submitted to in three cases—2 in the North Ward and 1 in the Infirmary. Of the cases in the Union House, from the certificates I gather no operation was performed. Exhaustion appears in four instances and Bronchitis in one case.

It will be seen from this list how much more frequent cases affecting the alimentary canal and digestive apparatus have been than in other regions.

I am afraid this list can in itself be of little use to discover if the locality can have any incidence as to the cause of this disease. Certainly no two cases have occurred in the same house, except in the Workhouse, and then probably the case was sent in with the growth already developed and the patient in the last stage of the disease.

Phthisis or Pulmonary Tuberculosis has caused 12 deaths during the year, giving a Death-rate of .87 per 1,000.

The deaths due to this disease during the past ten years are:—

	1907.	1903.	1905.	1904.	1903.	1902.	1901.	1900.	1899.	1898.
Deaths ...	12	11	9	13	11	10	16	16	18	14
Death Rate } per 1,000	.87	.81	.67	.98	.84	.76	1.27	1.30	1.49	1.18

It is a matter of congratulation that the Death-rate of the last six years is so distinctly low in comparison with the four preceding years. But I feel sure that of all diseases this one holds out more chance year by year of improved returns. Each year, I feel sure, brings us nearer to discovering some actual treatment whereby this disease can both be arrested and cured. The question arises also as to the advisability of Pulmonary Tuberculosis being made one of the Notifiable Diseases. I am personally of opinion that compulsory notification of this disease is advisable. Voluntary notification I believe to be of very little use.

But before compulsory notification is adopted, I think some provision should be made to remove those cases that cannot be adequately nursed in their own homes to a suitable and adequate Sanatorium. There are even in a town like Chelmsford many cases that have to live and be nursed in homes that are absolutely unfit and inadequate for this purpose. Under such conditions, those cases not only are distressing, but they are actually dangerous to those who have to live around them. The time must come sooner or later when the provision of Sanatoria, properly equipped and administered, will be compulsory. Then only, I suppose, will the notification of Pulmonary Tuberculosis become compulsory.

## Infantile Mortality.

The number of Deaths among Infants under one year of age during the past year was 18, or 14.6 per cent. of the total deaths. This gives an Infantile Death-rate of 60 per

1,000 Births. This, again, is the lowest Infantile Death-rate I can find recorded. It is, in fact, less than half the Infantile Death-rate of last year. Again, to shew how remarkable this rate is, the average Infantile Death-rate for the past ten years is 95.87 per 1,000 births.

Of these deaths, six, or one-third the total number, come under the heading of Premature Birth; four are certified as Marasmus; and three as Pneumonia. This year not a single death has been certified under the heading of Diarrhœa. This is really very remarkable. Certainly the past summer was not so hot as many. I hope, however, that the true explanation of the absence of Diarrhœal Diseases may be that more care has been taken over the feeding and the general cleanliness of the infants and their surroundings.

## Zymotic Diseases.

Three deaths only from Zymotic Diseases have been registered, giving a Zymotic Death-rate of .21 per 1,000.

As will be seen from Table IV., two were due to Enteric Fever and one to Diphtheria.

The Zymotic Death-rate per 1,000 for the last ten years has been:—

1907.	1906.	1905.	1904.	1903.	1902.	1901.	1900.	1899.	1898.
.21	1.18	.82	.84	1.61	.86	2.94	1.22	1.06	1.58

This gives an average for the past ten years of a Zymotic Death-rate of 1.23 per 1,000. Taking this average for ten years as being in itself very favourable, it can be seen at once how very remarkable this year's Zymotic Death-rate is—i.e., .21 per 1,000.

## Notifiable Infectious Diseases.

In Table III. the cases of Infectious Disease notified during the year are tabulated in full.

It will be seen that 98 cases have been notified.

The months in which these cases were notified I give below:—

	Scarlet Fever. Diphtheria. Typhoid Fever. Erysipelas						
January .....	5	...	6	...	—	...	—
February .....	5	...	1	...	—	...	—
March .....	7	...	4	...	—	...	1
April .....	6	...	—	...	8	...	1
May .....	4	...	3	...	2	...	2
June .....	3	...	1	...	—	...	2
July .....	2	...	2	...	1	..	1
August .....	5	...	1	...	—	...	1
September .....	1	...	—	...	—	...	1
October .....	—	...	3	...	—	...	1
November .....	2	...	3	...	—	...	—
December .....	5	...	7	...	—	...	—
	<hr/>		<hr/>		<hr/>		<hr/>
	45		31		11		10
	<hr/>		<hr/>		<hr/>		<hr/>

As in 1906, the cases of Scarlet Fever have been fairly evenly distributed throughout the year. October was the only month in which no case was notified. Again, also the distribution of these cases has been singularly even—23 cases from the North Ward and 22 in the South Ward. Each case has been enquired into, and with the exception of one or two cases of direct contact the origin of the case has not been discovered. The cases have for the most part been light in character. As will be seen by Table III., 31 of these cases were removed to the Isolation Hospital.



From the returns of the last nine years, Scarlet Fever has been practically endemic in character in the Borough. There has been no actual epidemic in the Borough since 1899, when for a few months notifications were received every day. Even as it is, I have no doubt that a few cases, very mild in character, escape notice; but I can have no doubt but that these cases and evidences of this disease are more closely observed by parents and school teachers than used to be the case.

In regard to the cases of Diphtheria, 31 cases were notified. Eight came from the North Ward and 23 from the South Ward. Of these 31 cases, 26 were removed to the Isolation Hospital. Last year 27 cases were notified, and 16 were removed to the Hospital. This year Diphtheria has caused one death, so that it may be safely presumed this disease has also been light in character. Dr. Martin, the Medical Officer of the Joint Hospital Board, tells me the chief trouble he has had with the Diphtheria cases in the Hospital has been a nasal catarrh, which is very obstinate in character in patients who otherwise are convalescent. I would suggest, if this continues, that a convalescent block should be attached to the building in Baker Lane, Galleywood. I feel sure that the purer and more bracing air of Galleywood would do these cases a lot of good and shorten their stay in Hospital very considerably.

It will be seen that eleven cases of Enteric Fever have been notified during the year. Ten of these cases occurred at the Chelmsford Infirmary. This outbreak I dealt with in a special report, which was submitted to the Sanitary Committee in May, and copies of which were transmitted to the Local Government Board and the Medical Officer of Health for the County. The other solitary case notified occurred in the North Ward, and calls for no special comment.

Of the other Infectious Diseases the Borough has been during the year singularly free. No death has been recorded from either Measles or Whooping Cough. This, in a great measure, accounts for the remarkably low Infantile and Zymotic Death-rates.

## House Accommodation.

I am still of opinion that there is no lack of Houses of all kinds in the Borough. The usual complaints are those of expense rather than inability to find houses. Naturally, of course, the difficulty is much greater in those cases where there are a number of children in the family. The houses are for the most part in a good sanitary condition and little difficulty is usually experienced in correcting defects that may be found.

UNION YARD.—The lower half of this yard has now been closed, with the exception of one house. The other houses in this part of the yard are empty and quite unfit for occupation.

FRENCH'S SQUARE has again quite recently been reported upon. A detailed list of repairs, etc., necessary to be done to those Houses has been furnished by the Inspector of Nuisances. I hope that the Sanitary Committee will compel this work to be done shortly.

The Courts and Yards in Moulsham are frequently visited. Every effort is made to keep these various Yards in as clean and sanitary condition as possible. The occupiers, however, give more trouble often than the houses themselves. They frequently appear to be wilfully and deliberately careless; frequently they appear to resent any effort made for improving their surroundings.

The house-to-house inspection has, I am afraid, made but little progress. The Inspector of Nuisances has, I have no doubt, done his best to get on with this very necessary work, but owing to his other duties he is unable to be able to give an amount of continued and consecutive work that would help to get this long-continued work successfully finished.

I suppose, however, now that Springfield and the Water-house Estate are in the Borough, a second Inspector of some kind will be appointed. In that case, by a suitable arrangement of work and duties, I should believe that more time could be given to the house to house inspection.

Some definite attempt to grapple with the question of the "Housing of the Working Classes" has been made, but nothing, however, has been done, chiefly owing to the prohibitive price of land.

## Sewerage and Drainage.

The Sewerage and Drainage of the Borough is, upon the whole, in a very satisfactory condition. I have, however, with much regret, to say that nothing has been done towards Sewer Ventilation. It is now two years since this question was the subject of a Local Government Board inquiry. The result of this inquiry was that the Sewer Ventilation should be carried out throughout the whole Borough. Yet two years have passed and nothing has been done. I still hold that this Borough, with its Sewers all practically unventilated, is in a deplorable, not to say dangerous, condition. Each year I have to report that Scarlet Fever and Diphtheria are practically endemic. Should a case be found in which the drainage to the one house in which the case has occurred is defective, that defect is at once taken in hand and possibly corrected. Yet for some reason no attempt is made by the Sanitary Committee to put their own system of drainage in order. If the drains of one house are found to be defective, the owner



of the house has at once to do what is right to obviate this defect; but the Council still neglect to do what is obviously the only right thing to do—i.e., to have all the Sewers throughout the Borough thoroughly ventilated.

In regard to the Sewers, the Suction Gas Plant at Messrs. Hoffmann's Works has acted as a sewer tester for the whole length of the main sewers on north side of New Street and High Street as far as Springfield Road. Many complaints have been received from property-owners in this area. Suction Gas Water in Sewers is a question which will have to be considered in the near future, especially in regard to the contamination of the Sewage Disposal Works. This matter also again emphasises the absolute necessity of Sewer Ventilation. I hope that during this coming year the proper drainage of the Waterhouse Estate will be taken in hand and carried out. At the present time this part of the Borough is in the most deplorable condition. I believe that a scheme for the Sewerage and Water Supply of this recently-acquired portion of the Borough is in the hands of the Local Government Board.

## Removal and Disposal of House Refuse.

I much regret I can report nothing favorable under this head since last year. This work is done by the Corporation under the direction of the Borough Surveyor. The collection and the removal gives rise to very few complaints, but with the disposal of the Refuse there is still the same trouble and difficulty that has existed for so many years.

The Borough Refuse is still "tipped" upon land abutting upon Beehive Lane. Quite recently there have again been serious complaints made in regard to the nuisance caused. These complaints, I have no doubt, are very genuine in character, and they will continue to be received until some other method of disposal can be found. To solve this difficulty, I still advocate strongly a Refuse Destructor.



## Water Supply, etc.

The Water Supply of the Borough continues to be derived from the three sources previously reported upon :

- (1) Deep Well, Mildmay Road.
- (2) Burgess Well.
- (3) Admiral's Park.

The recently-acquired portion of Springfield derives its water from the Rural District Council's Well in Baddow.

Apart from the water supplied to Springfield, the daily average supply to the Borough available is as follows:—

From the Deep Well, Mildmay Road .....	150,000 gallons
From Burgess Well .....	24,000 ,,
From Admiral's Park Well .....	70,000 ,,
	<hr/>
Per day .....	244,000 gallons
	<hr/>

This gives a daily supply available of 17.7 gallons per head per day.

I would call somewhat serious attention to these figures, as I do not consider the supply is adequate, especially so in face of the fact that there is no reserve supply. I would also call attention to the fact that both Burgess Well and Admiral's Park Well again show positive and definite signs of steadily decreasing in quantity. These two Wells have shewn signs of failing for some years. I would most urgently point out the necessity of permanently increasing the available supply. Each year the Borough increases, and this year the Waterhouse Estate must be supplied. This means, naturally, an increased demand. To meet this we have a water supply that shews signs of decreasing. The past year we had a cool summer; otherwise, I feel sure, we should have had many complaints of the scarcity of water. With an increasing demand and a hot and dry summer, we might be brought face to face with a serious and urgent difficulty. I still express a strong opinion that the whole of the Borough should be supplied with a constant water supply.

# Lists of Streets in the Borough of Chelmsford which have a Constant & Intermittent Supply of Water.

JANUARY, 1908.

Constant Supply.		Intermittent Supply.	
Rainsford Road. Park Avenue. South Primrose Hill. Maltese Road. Rainsford Lane. Coval Road. Burgess Well Road. Townfield Street. Viaduct Road. Glebe Road. Victoria Crescent. Park Road. Market Road. King Edward's Avenue. Threadneedle Street. Churchyard, from Day's Shop to Shire Hall. Widford. Wood Street.	London Road, from Wood St. down to the Infirmary. Elm Road. Upper Bridge Road, from Cherry Garden Lane down to and including Bellevue Cottages. Moulsham Street, from Elm Road to Southborough Road. Southborough Road. York Road. Redcliffe Road. Marlborough Road. Queen Street. Upper Anchor Street. Moulsham Street, from Southborough Road to Queen Street (West Side only). Moulsham Street, from Queen Street to Stone Bridge, contains a few houses which have a constant supply. London Road, from Dr. Bodkin's to the Iron Bridge (on West Side only).	Water on from 6 a.m. to about 2 p.m.  Primrose Hill. Broomfield Road. Rectory Lane. Fairfield Road. Duke Street, from Broomfield Road to Day's Shop on the North Side, and to the Golden Lion Public-house on the South Side. High Street from Stone Bridge to Judge Tindal's Statue. Part of houses have supply until about 10.30 a.m. only.	On old Pumping Main direct into the Town from Hall Street. Water on from 6.30 a.m. to 10.30 a.m., both Week-days and Sundays.  Moulsham Street, from Queen Street to Stone Bridge, except for a small number of houses, the supply to which is constant. Hamlet Road. High Street, from Stone Bridge to Judge Tindal's Statue. Part of houses have supply till 2 p.m. Friars Place. London Road, from Friars Place to the Iron Bridge (East Side only).
			Water on from about 6.30 a.m. to about 12.30 p.m. on week-days, and from about 6.30 a.m. to about 11 a.m. on Sundays.  Tindal Street. High Street, from Conduit to Judge Tindal's Statue. London Road, from High Street to the Iron Bridge. Springfield Road. St. John's Road. Mildmay Road. Lady Lane. Manor Road. Goldlay Road. Baddow Road. Van Dieman's Road. Hall Street. Roman Road. Church Street. Grove Road. George Street. Moulsham Street, from Southborough Road to St. John's Road (East Side only). Writtle Street. New Writtle Street. Lower Anchor Street. Upper Bridge Road, from New Writtle Street up to, but not including, Bellevue Cottages. Baker Street. Seymour Street. Wolseley Road. New Street. Legg Street. Church Street. Cottage Place. Victoria Road. Regina Road.

In regard to this system of an intermittent Water Supply, very considerable danger to health does occur through defective service pipes. When the pressure is turned off the supply pipes are very liable to become contaminated by matter emanating from manure pits, defective drains, road washings, etc. This applies especially to Moulsham. Samples of the defective service pipes can be seen at the Borough Surveyor's Office. What has been found to exist in Moulsham exists, possibly, in other parts of the Borough. With a constant supply these dangers are reduced to a minimum. Therefore I urge most strongly an increased Water Supply and a constant supply of Water.

The purity of the Borough Water Supply is shewn by the analyses given below. The results are given in grains per gallon :—

	Mildmay Road Deep Well.	Admirals Park.	Burgess Well.
Total Solid Matter .....	79.00	31.00	29.00
Chlorides .....	23.80	2.00	2.10
Equal to Chloride of Sodium .....	39.22	3.29	3.46
Nitrates expressed as Nitrogen .....	None	.45	.62
Free Ammonia .....	.0133	.0007	.0021
Albuminoid Ammonia ...	.0010	.0021	.0021
Oxygen absorbed in 15min. at 140deg. F .....	.0196	.0112	.0112
Appearance in 2ft. tube	Clear pale green	Clear pale blue	Clear
Smell when heated to 100deg. F.....	None	None	None
Metals.....	None	None	None
Microscopic Examina- tion.....	Slight deposit of earthy matter.	No Deposit	Slight deposit of Oxide of Iron



## REMARKS re MILD MAY ROAD DEEP WELL.

Total Solid Matter and Chlorides rather high.

Nitrates completely absent: Albuminoid Ammonia and Oxygen absorbed are both low, and show the absence of organic matter.

I consider this water is unpolluted and fit for drinking purposes.

## ADMIRAL'S PARK AND BURGESS WELLS.

Total Solid Matter, Chlorides, and Nitrates are low and satisfactory.

Free and Albuminoid Ammonias and Oxygen absorbed are low and shew the absence of organic matter.

I consider these waters are unpolluted and fit for drinking purposes.

H. W. NEWTON,

Medical Officer of Health.

October, 1907.



# ANNUAL REPORT OF THE MEDICAL OFFICER OF HEALTH FOR THE YEAR 1907 FOR THE BOROUGH OF CHELMSFORD,

On the administration of the Factory and Workshop Act, 1901, in connection with

FACTORIES, WORKSHOPS, LAUNDRIES, WORKPLACES, & HOMEWORK.

1.—INSPECTION. Including Inspections made by Sanitary Inspectors or Inspectors of Nuisances.

Premises.	Number of		
	Inspections.	Written Notices.	Prosecutions.
FACTORIES ... (Including Factory Laundries.)	89	12	—
WORKSHOPS ... (Including Workshop Laundries.)			
WORK PLACES ... (Other than Outworkers' premises included in Part 3 of this Report).			
Total ...	89	12	

## 2.—DEFECTS FOUND.

Particulars.	Number of Defects.			Number of Prosecutions.
	Found.	Remedied.	Referred to H.M. Inspector.	
<i>Nuisances under the Public Health Acts :</i>				
Want of Cleanliness ...	16	16		
Want of Ventilation ...				
Overcrowding ...				
Want of drainage of floors ...				
Other nuisances ...	3	3		
Sanitary accommo-				
dation. { Insufficient ... { Unsuitable or defective { Not separate for sexes				
<i>Offences under the Factory and Workshop Act :—</i>				
Illegal occupation of underground bakehouse (s. 101) ...	19	19		
Breach of special sanitary require- ments for bakehouses (ss. 97 to 100)				
Other offences ...				
(Excluding offences relating to out- work which are included in Part 3 of this Report.)				
Total ...	19	19		

3.—HOME WORK.

OUTWORKERS' LISTS, SECTION 107.																		OUTWORK IN UNWHOLESOME PREMISES, SECTION 108.			OUTWORK IN INFECTED PREMISES, SECTION 109, 110.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
NATURE OF WORK.	Lists received from Employers.						Addresses of Outworkers.		Prosecutions.		Inspections of Outworkers' premises.	(12)	(13)	(14)	(15)	(16)	(17)	(18)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	Twice in the year.		Once in the year.		Received from other Councils.	(9)	Failing to keep or permit inspection of lists.	(11)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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Wearing apparel — (1) making, &c. (2) cleaning and washing Lace, lace curtains and nets... Artificial flowers ... Nets, other than wire nets ... Tents ... Sacks ... Furniture and upholstery ... Fur pulling ... Feather sorting ... Umbrellas, &c. ... Carding, &c., of buttons, &c. Paper bags and boxes ... Basket making ... Brush making ... Racquet and tennis balls ... Stuffed toys ... File making ... Electro-plate ... Cables and chains ... Anchors and grapnels ... Cart gear ... Locks, latches and keys ... Pea picking ... Total	19	...	71	...	...	...	...	...	...	...	71	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

4.—REGISTERED WORKSHOPS.

Workshops on the Register (s. 131) at the end of the year. (1)	Number. (2)
Important classes of workshops, such as workshop bake- houses, may be enu- merated here. {	88
Total number of Workshops on Register ... ..	88

5.—OTHER MATTERS.

Class. (1)	Number. (2)
Matters notified to H.M. Inspector of Factories :—	
Failure to affix Abstract of the Factory and Workshop Act (s. 133) ... ..	
Action taken in matters referred by H.M. Inspector as remedi- able under the Public Health Acts, but not under the Factory and Workshop Act (s. 5) :—	
Notified by H.M. Inspector ... ..	
Reports (of action taken) sent to H.M. Inspector ... ..	
Other ... ..	
Underground Bakehouses (s. 101) :—	
Certificates granted during the year ... ..	1
In use at the end of the year ... ..	1



TABLE I.  
BOROUGH OF CHELMSFORD.

VITAL STATISTICS OF WHOLE DISTRICT DURING 1907 AND PREVIOUS YEARS.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.		TOTAL DEATHS REGISTERED.					TOTAL DEATHS IN PUBLIC INSTITUTIONS.	Deaths of Non- residents registered in Public Institutions.	Deaths of Residents registered in Public Institu- tions beyond the District.	NETT DEATHS AT ALL AGES.	
		Number.	Rate *	Under 1 year of Age		At all Ages.		Number.				Rate *	
				Number.	Rate per 1,000 Births registered.	Number.	Rate *						
1	2	3	4	5	6	7	8	9	10	11	12	13	
1897	11,840	332	28.04	27	85.13	196	16.55	68	45	...	151	12.79	
1898	11,977	325	27.08	24	73.84	206	17.16	70	46	...	160	13.30	
1899	12,116	290	23.29	29	100.00	187	15.43	56	40	...	147	12.14	
1900	12,250	394	29.47	35	88.83	247	20.16	50	28	...	219	15.96	
1901	12,589	371	28.48	41	110.15	236	18.69	81	41	...	195	15.44	
1902	12,794	296	22.74	29	99.05	212	16.77	69	48	...	174	13.76	
1903	13,000	327	25.15	32	98.65	204	15.69	71	48	...	156	12.00	
1904	13,150	336	25.63	22	65.42	183	13.91	64	37	...	146	11.10	
1905	13,320	293	21.99	30	102.38	176	13.21	55	32	...	144	10.80	
1906	13,500	266	19.70	36	135.33	231	17.1	77	42	...	189	14.00	
Averages for years 1897-1906	12,654	323	25.15	30.5	95.87	207.8	16.46	66.1	40.7	...	168	13.12	
1907	13,750	300	21.81	18	60	192	13.96	91	62	...	130	9.4	

\* Rates in Columns 4, 8, and 13 calculated per 1,000 of estimated population.

Area of District in acres (exclusive of area covered by water), 2,033.

Total population at all ages ... 1,2581 } at census  
Number of Inhabited Houses ... 2,755 }  
Average number of persons per house ... 4.61 } of 1901.

I.		II.		III.	
Institutions within the District receiving sick and infirm persons from outside the District.		Institutions outside the District receiving sick and infirm persons from the District.		Other Institutions, the deaths in which have been distributed among the several localities in the District.	
Chelmsford Infirmary	...	...	Nil	...	Nil
Chelmsford Union Workhouse Infirmary	...	...	Nil	...	Nil

Is the Union Workhouse within the District? Yes



TABLE III.  
BOROUGH OF CHELMSFORD.  
CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR, 1907.

NOTIFIABLE DISEASE.	CASES NOTIFIED IN WHOLE DISTRICT.						TOTAL CASES NOTIFIED IN EACH LOCALITY.		No. OF CASES REMOVED TO HOSPITAL FROM EACH LOCALITY.		Total cases removed to Hospital.
	At all Ages	At Ages—Years.					North Ward.	South Ward.	North Ward.	South Ward.	
		Under 1	1 to 5	5 to 15	15 to 25	25 to 65					
Small-pox ..	..	..	..	..	..	..	..	..	..	..	..
Cholera ..	..	..	..	..	..	..	..	..	..	..	..
Diphtheria .. (including Membranous Croup)	31	11	14	3	3	..	8	23	6	20	26
Erysipelas ..	10	2	1	1	6	..	6	4	..	20	31
Scarlet Fever ..	45	6	33	..	..	..	23	22	11	..	..
Typhus Fever ..	..	..	..	..	..	..	..	10	..	..	..
Enteric Fever ..	11	..	2	5	..	..	1	..	..	..	..
Relapsing Fever ..	..	..	..	..	..	..	..	..	..	..	..
Continued Fever ..	..	..	..	..	..	..	..	1	..	..	..
Puerperal Fever ..	1	..	..	..	..	1	..	..	..	..	..
Plague ..	..	..	..	..	..	..	..	..	..	..	..
Totals ..	98	19	50	15	14	..	38	60	17	40	57

Isolation Hospital ... Baddow Road.

TABLE IV.  
BOROUGH OF CHELMSFORD—CAUSES OF, AND AGES AT, DEATH DURING YEAR 1907.

CAUSES OF DEATH.	DEATHS IN WHOLE DISTRICT AT SUBJOINED AGES.							DEATHS IN LOCALITIES (AT ALL AGES).		DEATHS IN PUBLIC INSTITUTIONS.
	All ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and up-wards	North Ward.	South Ward.	
Small-pox ...	...	...	...	...	...	...	...	...	...	...
Measles ...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever ...	...	...	...	...	...	...	...	...	...	...
Whooping Cough ...	...	...	...	...	...	...	...	...	...	...
Diphtheria (including Membranous Croup)	1	...	...	1	...	...	...	1	...	...
Croup ...	...	...	...	...	...	...	...	...	...	...
Fever { Typhus	...	...	...	...	...	...	...	...	...	...
Enteric ...	2	...	...	1	...	1	...	...	2	1
Other continued ...	...	...	...	...	...	...	...	...	...	...
Epidemic Influenza ...	...	...	...	...	...	...	...	...	...	...
Cholera ..	...	...	...	...	...	...	...	...	...	...
Plague ...	...	...	...	...	...	...	...	...	...	...
Diarrhoea ...	...	...	...	...	...	...	...	...	...	...
Enteritis ...	...	...	...	...	...	...	...	...	...	...
Puerperal Fever ...	...	...	...	...	...	...	...	...	...	...
Erysipelas ...	...	...	...	...	...	...	...	...	...	...
Other Septic Diseases ...	...	...	...	...	...	...	...	...	...	...
Phthisis (Pulmonary Tuberculosis)	12	...	...	...	3	...	...	...	5	4
Other Tubercular Diseases ...	4	2	1	...	...	6	...	2	2	10
Cancer, Malignant Disease ...	10	...	...	...	...	4	...	5	5	2
Bronchitis ...	11	2	...	...	...	2	...	2	9	1
Pneumonia ...	7	3	1	2	...	1	...	3	4	...
Pleurisy ...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Respiratory Organs	...	...	...	...	...	...	...	...	...	...
Alcoholism ...	1	...	...	...	...	...	1	1	...	1
Cirrhosis of Liver ...	...	...	...	...	...	...	...	...	...	...
Venereal Diseases ...	...	...	...	...	...	...	...	...	...	...
Premature Birth ...	6	6	...	...	...	...	...	...	2	...
Diseases and Accidents of Parturition	1	...	...	...	...	...	...	...	...	...
Heart Diseases ...	14	...	...	1	1	4	8	12	12	12
Accidents ...	2	...	...	1	...	1	...	1	1	1
Suicides ...	1	...	...	...	...	1	...	...	1	3
Marasmus ...	4	4	...	...	...	...	...	...	3	1
All other causes ...	54	1	...	1	2	19	31	19	35	55
All causes ...	130	18	2	7	6	41	56	49	81	91

**TABLE V.**  
**BOROUGH OF CHELMSFORD—INFANTILE MORTALITY DURING THE YEAR 1907.**  
Deaths from stated Causes in Weeks and Months under One Year of Age.

[illegible]

District (or sub-division) of Chelmsford Urban.

District (or sub-division) of Chelmsford Urban.	Population (estimated to middle of 1907), 13,750.
Births in the Year (legitimate), 300.	Deaths in the Year (legitimate), 18.      Nett Deaths from all Causes at all Ages, 130.



## Nuisances. Proceedings for Abatement.

Again I can report, with pleasure, that no nuisances of any moment have been brought to notice.

## Places over which the Council have Supervision.

LODGING HOUSES.—Two only. They are frequently visited. They are clean and well conducted. No nuisance has been found in connection with them.

SLAUGHTER HOUSES.—These also are frequently and regularly inspected. They have been kept clean and are well drained. In this matter, as an improvement, I could only suggest a Public Abbatoir. At the present time there is no urgent need to press this question, but I believe it is only a matter of time before Public Abattoirs become compulsory.

DAIRIES, COWSHEDS, AND MILKSHOPS.—Again this year especial attention has been given to these, especially so was this the case when the Borough Extension question was being fought. The general cleanliness of the dairies admitted of no question. The improvements effected in regard to the cowsheds two years ago has been maintained.

The Milkshops have also been frequently inspected. All were found to be clean and in good order.

I regret again that nothing has been done towards the appointment of a Veterinary Inspector especially appointed to look after and report upon the dairies and the cows there kept for milking. I wrote last year again very fully upon this matter, and I still hold that such an appointment is most desirable, and should be made without delay. A further suggestion I would like to make in regard to the dairies and the milk supply is that samples of milk should be taken periodi-



cally from the dairies retailing milk in the Borough, and that these samples should be submitted to a qualified analyst to be reported upon by microscopical and bacteriological examination. It would then be possible with certainty to distinguish between the "clean" milk and the "dirty" milk, for some milks are, without doubt, so "dirty" that they are not fit for human consumption. Such investigations might be grouped under the headings:

- (1) Apparent filth       $\left\{ \begin{array}{l} \text{Volume of apparent filth.} \\ \text{The nature of the filth.} \end{array} \right.$
  
- (2)       $\left\{ \begin{array}{l} \text{Bacterial content of the milk.} \\ \text{Estimation of the number of B. coli. and other} \\ \text{organisms of excremental origin.} \end{array} \right.$

The presence also of pus, blood, and streptocci in milk should also be ascertained.

I feel sure that an examination of this character would be far more valuable than any chemical examination could be. It would shew at once the clean dairy in contrast to the dairy in which no attempt at cleanliness was made. Also it would shew the presence of unhealthy or diseased milk, in which case the cause could be followed up and the presence of unhealthy cows discovered.

FACTORIES AND WORKSHOPS.—These have again received careful attention. The report of work done under this heading is appended.

OFFENSIVE TRADES.—There are two only in the Borough. The premises have been inspected frequently. They have always been found to be clean and well kept. They have given rise to no nuisance.

BAKEHOUSES.—These again have been regularly and frequently visited. They are clean and well kept. There is one underground bakehouse in the Borough. It is well lighted and ventilated.

## Methods of Dealing with Infectious Diseases.

I have previously reported upon the methods adopted dealing with Infectious Diseases. These methods remain unchanged.

Disinfection of clothing, bedding, etc., is carried out by the Joint Hospital Authority. Disinfection of infected premises is done by your Inspector of Nuisances.

## Isolation Hospitals.

The Isolation Hospitals available are, as before reported: (1) Baddow Road, (2) Baker Lane, Galleywood.

They are managed by a Joint Hospital Board, composed of members of the Chelmsford Town Council and the Rural District Council of Chelmsford.

The Baddow Road Hospital receives patients only who may be suffering from Scarlet Fever or Diphtheria. I regret that no provision is made for receiving cases of Typhoid Fever. At the present time no provision is made in the Borough for isolating any case of Typhoid Fever that may arise. Should any case arise in a cottage, the proper treatment, and—what is most important—efficient nursing, may be absolutely impossible. I submit most strongly that arrangements should be made by this Joint Hospital Board to receive such cases when necessary.

Last year I ventured to suggest that an additional Convalescent or Discharge Block should be added to the present Hospital. At the time of writing nothing has been done towards this addition. I am sorry this is so, for I feel sure that this addition would add very much to the value of this Hospital; especially would it tend to reduce to a minimum the number of "return" cases.

I am told on good authority it is proposed to use the Hospital at Baker Lane, Galleywood, for the convalescents. I would like to point out the danger of this. This building was erected especially for Small-pox, and I think it should be kept ready for such cases. Supposing a case of Small-pox should arise and this building was then occupied by "convalescent" Scarlet Fevers, and much delay and possibly much danger would arise before this building would be ready to receive the case it was specially built for.

During the past year 57 cases of Infectious Disease were removed from the Borough to the Isolation Hospital. Of these, 17 were removed from the North Ward and 40 from the South Ward. Of these, 26 were cases of Diphtheria and 31 were cases of Scarlet Fever.

## Improvements in Progress or Required.

- (1) An increased Water Supply.
- (2) Refuse Destructor.
- (3) Complete and thorough Ventilation of the Sewers.
- (4) Drainage of and Water Supply to the Waterhouse Estate.
- (5) Extension of the Main Sewer, Long Stumps Road.
- (6) New Street Improvement (in progress).

- (7) Making-up the following Private Streets:—  
Parker Road. Angel Yard,  
School View Road. Gainsboro' Crescent,  
Roads on Waterhouse Estate.
- (8) Duke Street Improvement.
- (9) New Public Conveniences.
- (10) New Disposal Works at the Sewage Farm.

I append to this report the Report of your Inspector of Nuisances.

I have the honor to be, Gentlemen,

Your obedient Servant,

H. W. NEWTON,

M.R.C.S., L.R.C.P., D.P.H.,

Medical Officer of Health.



SUMMARY OF WORK  
done by the  
INSPECTOR OF NUISANCES  
in the Borough of Chelmsford, during the Year  
ended 31st December, 1907.

Complaints received .....	68
Nuisances detected without complaint .....	974
Nuisances abated .....	953
Notices served .....	346
Summonses taken out .....	1
Convictions .....	Nil
Houses inspected under the heading of House-to-House Inspection .....	339
Common Lodging Houses (inspected weekly) .....	2
Slaughter Houses (inspected weekly), seven in old Borough, two in extended area—Total .....	9
Bakehouses (visited every month) .....	

DAIRIES, COWSHEDS, AND MILKSHOPS.

Cowsheds 8, Dairies 11, Milkshops 17 (inspected monthly). All the Dairies and Cowsheds have been properly limewashed at least twice a year.

N.B.—I am glad to report that the owners of the Cowsheds have made proper arrangements for the milkers to be able to wash their hands before milking the cows, by having pails of water and clean towels provided for their use. This arrangement the men readily comply with.

Filthy houses cleansed, Sec. 46 Public Health Act, 1875	11
Houses disinfected .....	99

## PATIENTS REMOVED TO ISOLATION HOSPITAL:

Scarlet Fever .....	35
Diphtheria .....	29
Typhoid Fever .....	2

N.B.—The Typhoid Fever cases were removed to the Chelmsford Infirmary.

Overcrowding abated .....	11
Houses closed .....	4
Cisterns cleansed, repaired, and covered .....	48
Animals improperly kept removed .....	19
Samples of water taken for analysis .....	8
Cesspools emptied (only from the Waterhouse Estate)	
Sink waste pipes disconnected .....	3
Glazed gulley traps fixed .....	41
Water closets cleansed or repaired .....	84
Flushing apparatus provided to water closets .....	197
Storage tanks provided .....	63
Flushing apparatus repaired .....	124
Drains tested .....	98
Drains unblocked .....	84
Drains ventilated .....	23
Drains intercepted .....	17
Soil pipes found defective .....	25
Waste of water detected .....	33
Ashpits repaired .....	3
Galvanized iron sanitary dustbins provided.....	28
Accumulations of manure removed .....	73
Manure pits built or repaired .....	1
Urinals cleansed or limewashed .....	27
Gutterings repaired or cleaned out .....	43
Dilapidated paving of back yards repaired .....	17

# ELEMENTARY SCHOOLS WITHIN THE BOROUGH, viz.:—

Victoria	Boys.
„	Girls.
„	Infants.
Friars Council	Boys.
„	Girls.
„	Infants.
St. John's	Boys.
„	Girls.
„	Infants.
St Peter's	Infants.
Roman Catholic	Mixed.

The School buildings have been fumigated and the drains tested twice during the year.

Springfield	Mixed and Infants (Springfield Green).
„	Infants (Trinity Road).

CARAVANS inspected ..... 67

## OFFENSIVE TRADES.

There are only two in the Borough—viz., Messrs. Dixon and Son and Mr. J. Budds. These are frequently inspected and found to be kept in a satisfactory condition.

## FACTORY AND WORKSHOP ACT.

Workshops inspected .....	89
Workrooms limewashed .....	16
Water closets cleansed or repaired .....	3
Outworkers premises inspected .....	72

WILLIAM KIRKHAM BAKER,

Cert. Royal Sanitary Institute,

Inspector of Nuisances.

